VO₂ with an increase in grade was not significantly different between P1 (4.37) and P2 (4.69). This indicates that 1 min stages appear to allow an adequate VO₂ kinetic response. Treadmill time was significantly less during P1 (10.1 min) than during the other protocols (Table II) and was consistent with the recommendations that a total testing time of 7 to 10 min in length is adequate to allow appropriate maximal physiological adjustments (Pollock et al, 1976).

There were no differences between protocols in terms of the maximal physiological data obtained, with the exception of RPE max. RPE max was lowest during P1, and significantly lower during P1 than during P3 (P < 0.05). Therefore, it appears that 1 min stages are adequate for a VO₂ max test and the shorter testing time may have resulted in a lower perception of test difficulty at peak exercise with no reduction in VO₂ max when compared to protocols of a longer duration.

CONCLUSIONS

Even though all of the protocols tested elicited similar VO₂ max data (1.1% variance between means), we suggest a protocol using 1 min test stages and running speeds that approximate the runner's training pace for the assessment of VO₂ max. This may result in a lower perception of difficulty throughout the test due to enhanced subject comfort and shorter testing times.

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